

## Diastema Closure with Direct Composite Restoration

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### I. Introduction

Diastema between anterior teeth is often considered an challenging esthetic treatment. Among the available options for diastema closure such as orthodontics, restorative dentistry, and prosthodontics, it is appreciable that restorative approach, especially direct composite restoration is the simplest, fastest, and most predictable solution. Direct composite restoration should be concentrated on not only function but also the patient's esthetic satisfaction. To achieve this goal, the patient's esthetic expectation should be analyzed profoundly before the treatment. One of the difficulties in treatment procedures is closing diastema without "black triangle" between the teeth with natural contours at the gingival-tooth interface. For closing the diastema appropriately, the clinician should be knowledgeable about oral anatomy and consider esthetic integration with soft tissue(proximal gingiva) and hard tissue(teeth) comprehensively. This paper reports a diastema closure case in maxillary anterior teeth could be successfully accomplished using direct composite restorations and contouring.

### II. Case report

1. Sex/age : Male/23
2. Chief Complaint : 'I want to get my upper anterior tooth fracture and diastema treated'
3. Past dental history :
  - Not Specific
4. Present illness : #11 : Cr. Fx. w/o pulp exposure  
air (-) per (-) mob (-) EPT (+) pain (-)  
#11, 21 : Diastema  
air (-) per (-) mob (-) EPT (+) pain (-)
5. Diagnosis : Diastema on #11, 21
6. Treatment plan : Diastema closure with direct composite restoration on #11, 21

### III. Conclusion

Diastema closure with direct composite resin is a recommended clinical procedures in restorative dentistry. However, in case where there is a wide space between the central incisors, simple direct composite restoration may not solve the difficulty because of distortion of golden ratio in esthetics and the "black triangles" remaining after treatment. In this case, golden ratio of

esthetics and the patient demands were examined in detail before the treatment. Diagnostic wax-up was done to evaluate balance between soft tissue and hard tissue. After laboratory work, diastema closure was performed with direct composite restoration (Filtek™ Z350 XT, 3M ESPE) using the incremental layering technique. The adhesive system used was total-etching bonding system (OptiBond™ FL, Kerr Dental) for a strong adhesion between teeth and composite resin. Diastema closure was going to close the cervical 1/3 of the diastema at the first-step and then the rest of the diastema. But diastema closure was done at once. As a result, it was regrettable that the contact point was made at the top of teeth, leaving a black triangle in the radiographic picture, and crown outline was restored in a straight line, not in a natural anatomical structure. Therefore, at the one-week recall check, the restoration was re-contoured and the patient was satisfied. Periodic follow-up is necessary to check the state of restoration and relapse of the black triangles.